Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An interbody spinal implant made of cortical bone for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone ring having a medullary canal obtained from a major long bone of a human, said body having a perimeter with a leading end, a trailing end opposite said leading end and a length therebetween, and opposite exterior sides, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a portion of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the implantation space;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are ~~generally~~ parallel to each other; and

an opening ~~coincident with~~ formed by the medullary canal passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides and having a perimeter with substantially the same configuration as a perimeter of the natural

medullary canal present when the major long bone is cut transverse to the medullary canal to form the bone ring, ~~and~~ said opening having a maximum length in a direction parallel to the mid-longitudinal axis and a maximum width transverse to the mid-longitudinal axis, ~~of said body, said opening having a first dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said leading end of said body and a plane perpendicular to and bisecting the length of said body into two parts of equal maximum length along the mid-longitudinal axis, said opening having a second dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said trailing end of said body and the plane, said first dimension being greater than said second dimension, the plane passing through at least a portion of said opening,~~ the maximum width being greater than the maximum length, said trailing end being at least in part ~~having a~~ non-linear~~, portion between two lines parallel to the mid-longitudinal axis, the parallel lines being spaced apart from one another on opposite sides of the mid-longitudinal axis and intersecting the maximum width of said opening.~~

2. (previously presented) The implant of claim 1, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 3 (cancelled).

4. (previously presented) The implant of claim 1, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

5. (previously presented) The implant of claim 1, wherein said straight portion of said at least one side is oriented generally parallel to the mid-longitudinal axis of said implant.

Claim 6 (cancelled).

7. (original) The implant of claim 1, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at

least one of the adjacent vertebral bodies to maintain said implant within the implantation space.

8. (original) The implant of claim 7, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.
9. (original) The implant of claim 1, wherein said upper and lower surfaces are porous.
10. (original) The implant of claim 1, wherein said upper and lower surfaces include a bone ingrowth surface.
11. (original) The implant of claim 1, wherein the perimeter of said body forms at least a portion of a ring.
12. (previously presented) The implant of claim 1, wherein said body has a closed perimeter.
13. (previously presented) The implant of claim 1, wherein said body has an open perimeter for providing access to said opening.
14. (original) The implant of claim 1, wherein said implant is generally rectangular in shape.
15. (original) The implant of claim 1, wherein said implant is generally oval in shape.
16. (original) The implant of claim 1, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.
17. (original) The implant of claim 1, wherein at least a portion of said leading end is tapered for facilitating insertion of said implant between the two adjacent vertebral bodies.
18. (original) The implant of claim 1, wherein said implant is adapted for insertion from the anterior aspect of the vertebral bodies and said trailing end is configured to conform to the anatomic contour of at least a portion of the anterior aspect of the vertebral bodies.

19. (original) The implant of claim 1, wherein said implant has a maximum length less than and approximating the posterior to anterior depth of the vertebral bodies.

20. (original) The implant of claim 1, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies.

Claim 21 (cancelled).

22. (original) The implant of claim 1, wherein said opening is compressively loaded with fusion promoting material.

23. (original) The implant of claim 1, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

24. (original) The implant of claim 23, wherein said second opening communicates with said opening.

25. (original) The implant of claim 1, further comprising a plurality of openings and passages adapted to retain a fusion promoting substance.

26. (previously presented) The implant of claim 1, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

27. (previously presented) The implant of claim 26, further comprising a lock for locking said at least one bone screw to said implant.

28. (original) The implant of claim 27, wherein said lock is made of one of cortical bone and a bioresorbable material.

29. (previously presented) The implant of claim 26, wherein said at least one bone screw is made of one of cortical bone and a bioresorbable material.

30. (original) The implant of claim 1, wherein said implant is manufactured from one of a diaphyseal bone and from a metaphyseal bone.

Claim 31 (cancelled).

32. (original) The implant of claim 1, further in combination with fusion promoting substances.

33. (original) The implant of claim 1, in combination with a fusion promoting material other than bone.

34. (original) The implant of claim 1, wherein said implant comprises a bone ingrowth material other than bone.

35. (original) The implant of claim 1, further comprising a material, other than the bone from which said implant is formed, that intrinsically participates in the growth of bone from one of the adjacent vertebral bodies to the other of the adjacent vertebral bodies.

36. (previously presented) The implant of claim 33, wherein said fusion promoting material is bone morphogenetic protein.

37. (original) The implant of claim 1, further in combination with bone morphogenetic protein.

38. (original) The implant of claim 1, further in combination with an osteogenic material.

39. (original) The implant of claim 38, wherein said osteogenic material is a material other than bone.

40. (original) The implant of claim 38, wherein said material is genetic material coding for the production of bone.

41. (original) The implant of claim 1, further in combination with genetic material coding for production of bone.

42. (original) The implant of claim 1, further in combination with a chemical substance to inhibit scar formation.

43. (withdrawn) An interbody spinal implant made of a bone composite material for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone composite material, said body having a perimeter with a leading end, a trailing end opposite said leading end, and opposite exterior sides, said body having a mid-longitudinal axis passing through

said leading and trailing ends, said leading end having a generally straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a portion of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the implantation space;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are generally parallel to each other; and

an opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides and having a maximum width transverse to the mid-longitudinal axis of said body, said trailing end having a non-linear portion between two lines parallel to the mid-longitudinal axis, the parallel lines being spaced apart from one another on opposite sides of the mid-longitudinal axis and intersecting the maximum width of said opening.

44. (withdrawn) The implant of claim 43, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 45 (cancelled).

46. (withdrawn) The implant of claim 43, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

47. (withdrawn) The implant of claim 43, wherein said straight portion of said at least one side is oriented generally parallel to the mid-longitudinal axis of said implant.

Claim 48 (cancelled).

49. (withdrawn) The implant of claim 43, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at least one of the adjacent vertebral bodies to maintain said implant within the implantation space.

50. (withdrawn) The implant of claim 49, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

51. (withdrawn) The implant of claim 43, wherein said upper and lower surfaces are porous.

52. (withdrawn) The implant of claim 43, wherein said upper and lower surfaces include a bone ingrowth surface.

53. (withdrawn) The implant of claim 43, wherein the perimeter of said body forms at least a portion of a ring.

54. (withdrawn) The implant of claim 43, wherein said implant has a closed perimeter.

55. (withdrawn) The implant of claim 43, wherein said implant has an open perimeter for providing access to said opening.

56. (withdrawn) The implant of claim 43, wherein said implant is generally rectangular in shape.

57. (withdrawn) The implant of claim 43, wherein said implant is generally oval in shape.

58. (withdrawn) The implant of claim 43, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

59. (withdrawn) The implant of claim 43, wherein at least a portion of said leading end is tapered for facilitating insertion of said implant between the two adjacent vertebral bodies.

60. (withdrawn) The implant of claim 43, wherein said implant is adapted for insertion from the anterior aspect of the vertebral bodies and said trailing end is

configured to conform to the anatomic contour of at least a portion of the anterior aspect of the vertebral bodies.

61. (withdrawn) The implant of claim 43, wherein said implant has a maximum length less than and approximating the posterior to anterior depth of the vertebral bodies.

62. (withdrawn) The implant of claim 43, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies.

63. (withdrawn) The implant of claim 43, wherein said opening is compressively loaded with fusion promoting material.

64. (withdrawn) The implant of claim 43, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

65. (withdrawn) The implant of claim 64, wherein said second opening communicates with said opening.

66. (withdrawn) The implant of claim 43, further comprising a plurality of openings and passages adapted to retain a fusion promoting substance.

67. (withdrawn) The implant of claim 43, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

68. (withdrawn) The implant of claim 67, further comprising a lock for locking said at least one bone screw to said implant.

69. (withdrawn) The implant of claim 68, wherein said lock is made of one of cortical bone and a bioresorbable material.

70. (withdrawn) The implant of claim 67, wherein said at least one bone screw is made of one of cortical bone and a bioresorbable material.

71. (withdrawn) The implant of claim 43, wherein said composite material includes filaments of bone.

72. (withdrawn) The implant of claim 43, wherein said composite material includes a bioresorbable plastic.

73. (withdrawn) The implant of claim 43, wherein said composite material includes ceramic.

74. (withdrawn) The implant of claim 43, further in combination with fusion promoting substances.

75. (withdrawn) The implant of claim 43, in combination with a fusion promoting material other than bone.

76. (withdrawn) The implant of claim 43, wherein said implant comprises a bone ingrowth material other than bone.

77. (withdrawn) The implant of claim 43, further comprising a material, other than the bone from which said implant is formed, that intrinsically participates in the growth of bone from one of the adjacent vertebral bodies to the other of the adjacent vertebral bodies.

78. (withdrawn) The implant of claim 75, wherein said fusion promoting material is bone morphogenetic protein.

79. (withdrawn) The implant of claim 43, further in combination with bone morphogenetic protein.

80. (withdrawn) The implant of claim 43, further in combination with an osteogenic material.

81. (withdrawn) The implant of claim 80, wherein said osteogenic material is a material other than bone.

82. (withdrawn) The implant of claim 81, wherein said material is genetic material coding for the production of bone.

83. (withdrawn) The implant of claim 43, further in combination with genetic material coding for production of bone.

84. (withdrawn) The implant of claim 43, in combination with a chemical substance to inhibit scar formation.

85. (currently amended) An interbody spinal implant made of cortical bone for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least

a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone ring having a medullary canal obtained from a major long bone of a human, said body having a perimeter with a leading end, a trailing end opposite said leading end and a length therebetween, and opposite exterior sides therebetween, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a part of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the implantation space;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are ~~generally~~ parallel to each other;

an opening ~~coincident with~~formed by the medullary canal passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides and having a perimeter with substantially the same configuration as a perimeter of the natural medullary canal present when the major long bone is cut transverse to the medullary canal to form the bone ring, ~~and~~ said opening having a maximum length in a direction parallel to the mid-longitudinal axis and a maximum width transverse to the mid-longitudinal axis, ~~of said body, said opening having a first dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said leading end of said body and a plane perpendicular to and bisecting the length of said body into two parts of equal maximum length along the mid-longitudinal axis, said opening having a second~~

~~dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said trailing end of said body and the plane, said first dimension being greater than said second dimension, the plane passing through at least a portion of said opening,~~ the maximum width being greater than the maximum length, said trailing end ~~having a~~ being at least in part non-linear ~~portion between two lines parallel to the mid-longitudinal axis, the parallel lines being spaced apart from one another on opposite sides of the mid-longitudinal axis and intersecting the maximum width of said opening~~; and

said implant being formed by the process of cutting a section of a long bone in a direction transverse to the longitudinal axis of the long bone to form at least a portion of a bone ring and machining said leading end to form said straight portion.

86. (original) The implant of claim 85, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 87 (cancelled).

88. (previously presented) The implant of claim 85, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

89. (previously presented) The implant of claim 85, wherein said straight portion of said at least one side is oriented generally parallel to the mid-longitudinal axis of said implant.

Claim 90 (cancelled).

91. (original) The implant of claim 85, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at least one of the adjacent vertebral bodies to maintain said implant within the disc space.

92. (original) The implant of claim 91, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

93. (original) The implant of claim 85, wherein said upper and lower surfaces are porous.

94. (original) The implant of claim 85, wherein said upper and lower surfaces include a bone ingrowth surface.

95. (original) The implant of claim 85, wherein the perimeter of said body forms at least a portion of a ring.

96. (previously presented) The implant of claim 85, wherein said body has a closed perimeter.

97. (previously presented) The implant of claim 85, wherein said body has an open perimeter for providing access to said opening.

98. (original) The implant of claim 85, wherein said implant is generally rectangular in shape.

99. (original) The implant of claim 85, wherein said implant is generally oval in shape.

100. (original) The implant of claim 85, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

101. (original) The implant of claim 85, wherein at least a portion of said leading end is tapered for facilitating insertion of the implant between the two adjacent vertebral bodies.

102. (original) The implant of claim 85, wherein said implant is adapted for insertion from the anterior aspect of the vertebral bodies and said trailing end is configured to conform to the anatomic contour of at least a portion of the anterior aspect of the vertebral bodies.

103. (original) The implant of claim 85, wherein said implant has a maximum length less than and approximating the posterior to anterior depth of the vertebral bodies.

104. (original) The implant of claim 85, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies.

105. (original) The implant of claim 85, wherein said opening is formed from at least a portion of the medullary canal of the long bone from which said implant is formed.

106. (original) The implant of claim 85, wherein said opening is compressively loaded with fusion promoting material.

107. (original) The implant of claim 85, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

108. (original) The implant of claim 107, wherein said second opening communicates with said opening.

109. (original) The implant of claim 85, further comprising a plurality of openings and passages for retaining fusion promoting substance.

110. (previously presented) The implant of claim 85, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

111. (previously presented) The implant of claim 110, further comprising a lock for locking said at least one bone screw to said implant.

112. (previously presented) The implant of claim 111, wherein said lock is made of one of cortical bone and a bioresorbable material.

113. (previously presented) The implant of claim 110, wherein said at least one bone screw is made of one of cortical bone and a bioresorbable material.

114. (original) The implant of claim 85, wherein said implant is manufactured from one of a diaphyseal bone and from a metaphyseal bone.

115. (original) The implant of claim 85, wherein said implant further comprises a bone composite material.

116. (original) The implant of claim 85, further in combination with fusion promoting substances.

117. (original) The implant of claim 85, in combination with a fusion promoting material other than bone.

118. (original) The implant of claim 85, wherein said implant comprises a bone ingrowth material other than bone.

119. (original) The implant of claim 85, further comprising a material, other than the bone from which said implant is formed, that intrinsically participates in the growth of bone from one of the adjacent vertebral bodies to the other of the adjacent vertebral bodies.

120. (original) The implant of claim 117, wherein said fusion promoting material is bone morphogenetic protein.

121. (original) The implant of claim 85, further in combination with bone morphogenetic protein.

122. (original) The implant of claim 85, further in combination with an osteogenic material.

123. (original) The implant of claim 122, wherein said osteogenic material is a material other than bone.

124. (original) The implant of claim 123, wherein said material is genetic material coding for the production of bone.

125. (original) The implant of claim 85, further in combination with genetic material coding for production of bone.

126. (original) The implant of claim 85, in combination with a chemical substance to inhibit scar formation.

127. (previously presented) The implant of claim 1, wherein said non-linear portion generally approximates the natural curvature of the bone ring.

128. (previously presented) The implant of claim 43, wherein said non-linear portion generally approximates the natural curvature of the bone ring.

129. (previously presented) The implant of claim 85, wherein said non-linear portion generally approximates the natural curvature of the bone ring.

Claims 130-147 (cancelled).

148. (previously presented) The implant of claim 7, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of

insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

149. (previously presented) The implant of claim 1, wherein said trailing end includes at least two bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

150. (previously presented) The implant of claim 149, wherein at least one of said bone screw openings is oriented toward said upper surface and at least one of said bone screw openings is oriented toward said lower surface.

151. (previously presented) The implant of claim 150, wherein said trailing end includes at least a third bone screw opening, said bone screw openings being alternately oriented relative to one another toward one of said upper and lower surfaces.

152. (previously presented) The implant of claim 149, wherein each of said bone screw openings extend through at least one of said upper and lower surfaces.

153. (withdrawn) The implant of claim 49, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

154. (withdrawn) The implant of claim 43, wherein said trailing end includes at least two bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

155. (withdrawn) The implant of claim 154, wherein at least one of said bone screw openings is oriented toward said upper surface and at least one of said bone screw openings is oriented toward said lower surface.

156. (withdrawn) The implant of claim 155, wherein said trailing end includes at least a third bone screw opening, said bone screw openings being alternately oriented relative to one another toward one of said upper and lower surfaces.

157. (withdrawn) The implant of claim 154, wherein each of said bone screw openings extend through at least one of said upper and lower surfaces.

158. (previously presented) The implant of claim 91, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

159. (previously presented) The implant of claim 85, wherein said trailing end includes at least two bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

160. (previously presented) The implant of claim 159, wherein at least one of said bone screw openings is oriented toward said upper surface and at least one of said bone screw openings is oriented toward said lower surface.

161. (previously presented) The implant of claim 160, wherein said trailing end includes at least a third bone screw opening, said bone screw openings being alternately oriented relative to one another toward one of said upper and lower surfaces.

162. (previously presented) The implant of claim 159, wherein each of said bone screw openings extend through at least one of said upper and lower surfaces.

163. (currently amended) An interbody spinal implant made of cortical bone for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone ring having a medullary canal obtained from a major long bone of a human, said body having a perimeter with a leading end, a trailing end opposite said leading end and a length therebetween, and opposite exterior sides, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a portion of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the

implantation space, said trailing end being at least in part curved along a middle portion of said trailing end;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are ~~generally~~ parallel to each other; and

an opening ~~coincident with~~formed by the medullary canal passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides, said opening having a perimeter with substantially the same configuration as a perimeter of the natural medullary canal present when the major long bone is cut transverse to the medullary canal to form the bone ring, ~~and a first dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said leading end of said body and a plane perpendicular to and bisecting the length of said body into two parts of equal maximum length along the mid-longitudinal axis, said opening having a second dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said trailing end of said body and the plane, said first dimension being greater than said second dimension, the plane passing through at least a portion of said opening~~said opening having a maximum length in a direction parallel to the mid-longitudinal axis and a maximum width transverse to the mid-longitudinal axis, the maximum width being greater than the maximum length.

164. (previously presented) The implant of claim 163, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 165 (cancelled).

166. (previously presented) The implant of claim 163, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

Claim 167 (cancelled).

168. (previously presented) The implant of claim 163, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at least one of the adjacent vertebral bodies to maintain said implant within the implantation space.

169. (previously presented) The implant of claim 168, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

170. (previously presented) The implant of claim 168, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

171. (previously presented) The implant of claim 163, wherein said body has a closed perimeter.

172. (previously presented) The implant of claim 163, wherein said body has an open perimeter for providing access to said opening.

173. (previously presented) The implant of claim 163, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

174. (previously presented) The implant of claim 163, wherein at least a portion of said leading end is tapered for facilitating insertion of said implant between the two adjacent vertebral bodies.

175. (previously presented) The implant of claim 163, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies adjacent the implantation space into which said implant is to be inserted.

176. (previously presented) The implant of claim 163, further comprising at least a second opening passing through said upper and lower surfaces for permitting for

the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

177. (previously presented) The implant of claim 163, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

178. (previously presented) The implant of claim 177, further comprising a lock for locking said at least one bone screw to said implant.

179. (previously presented) The implant of claim 163, further in combination with fusion promoting substances.

180. (previously presented) The implant of claim 179, wherein said fusion promoting includes at least one of bone, bone morphogenetic protein, and genetic material coding for the production of bone.

181. (previously presented) The implant of claim 163, further in combination with a chemical substance to inhibit scar formation.

182. (previously presented) The implant of claim 163, wherein said trailing end includes at least two bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

183. (withdrawn) An interbody spinal implant made of a bone composite material for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone composite material, said body having a perimeter with a leading end, a trailing end opposite said leading end, and opposite exterior sides, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a generally straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a portion of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into

the implantation space, said trailing end being at least in part curved along a middle portion of said trailing end;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are generally parallel to each other; and

an opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides.

184. (withdrawn) The implant of claim 183, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 185 (cancelled).

186. (withdrawn) The implant of claim 183, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

Claim 187 (cancelled).

188. (withdrawn) The implant of claim 183, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at least one of the adjacent vertebral bodies to maintain said implant within the implantation space.

189. (withdrawn) The implant of claim 188, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

190. (withdrawn) The implant of claim 188, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

191. (withdrawn) The implant of claim 183, wherein said implant has a closed perimeter.

192. (withdrawn) The implant of claim 183, wherein said implant has an open perimeter for providing access to said opening.

193. (withdrawn) The implant of claim 183, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

194. (withdrawn) The implant of claim 183, wherein at least a portion of said leading end is tapered for facilitating insertion of said implant between the two adjacent vertebral bodies.

195. (withdrawn) The implant of claim 183, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies adjacent the implantation space into which said implant is to be inserted.

196. (withdrawn) The implant of claim 183, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

197. (withdrawn) The implant of claim 183, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

198. (withdrawn) The implant of claim 197, further comprising a lock for locking said at least one bone screw to said implant.

199. (withdrawn) The implant of claim 183, further in combination with fusion promoting substances.

200. (withdrawn) The implant of claim 199, wherein said fusion promoting includes at least one of bone, bone morphogenetic protein, and genetic material coding for the production of bone.

201. (withdrawn) The implant of claim 183, further in combination with a chemical substance to inhibit scar formation.

202. (withdrawn) The implant of claim 183, wherein said trailing end includes at least two bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

203. (currently amended) An interbody spinal implant made of cortical bone for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone ring having a medullary canal obtained from a major long bone of a human, said body having a perimeter with a leading end, a trailing end opposite said leading end and a length therebetween, and opposite exterior sides therebetween, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a part of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the implantation space, said trailing end being at least in part curved along a middle portion of said trailing end;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are ~~generally~~ parallel to each other;

an opening ~~coincident with~~ formed by the medullary canal passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides, said opening having a perimeter with substantially the same configuration as a perimeter of the natural medullary canal present when the major long bone is cut transverse

to the medullary canal to form the bone ring, ~~and a first dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said leading end of said body and a plane perpendicular to and bisecting the length of said body into two parts of equal maximum length along the mid-longitudinal axis, said opening having a second dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said trailing end of said body and the plane, said first dimension being greater than said second dimension, the plane passing through at least a portion of said opening~~said opening having a maximum length in a direction parallel to the mid-longitudinal axis and a maximum width transverse to the mid-longitudinal axis, the maximum width being greater than the maximum length; and

said implant being formed by the process of cutting a section of a long bone in a direction transverse to the longitudinal axis of the long bone to form at least a portion of a bone ring and machining said leading end to form said straight portion.

204. (previously presented) The implant of claim 203, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 205 (cancelled).

206. (previously presented) The implant of claim 203, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

Claim 207 (cancelled).

208. (previously presented) The implant of claim 203, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at least one of the adjacent vertebral bodies to maintain said implant within the disc space.

209. (previously presented) The implant of claim 208, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

210. (previously presented) The implant of claim 208, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

211. (previously presented) The implant of claim 203, wherein said body has a closed perimeter.

212. (previously presented) The implant of claim 203, wherein said body has an open perimeter for providing access to said opening.

213. (previously presented) The implant of claim 203, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

214. (previously presented) The implant of claim 203, wherein at least a portion of said leading end is tapered for facilitating insertion of the implant between the two adjacent vertebral bodies.

215. (previously presented) The implant of claim 203, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies adjacent the implantation space into which said implant is to be inserted.

216. (previously presented) The implant of claim 203, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

217. (previously presented) The implant of claim 203, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

218. (previously presented) The implant of claim 217, further comprising a lock for locking said at least one bone screw to said implant.

219. (previously presented) The implant of claim 203, further in combination with fusion promoting substances.

220. (previously presented) The implant of claim 219, wherein said fusion promoting includes at least one of bone, bone morphogenetic protein, and genetic material coding for the production of bone.

221. (previously presented) The implant of claim 203, further in combination with a chemical substance to inhibit scar formation.

222. (previously presented) The implant of claim 203, wherein said trailing end includes at least two bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

223. (currently amended) An interbody spinal implant made of cortical bone for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone ring having a medullary canal obtained from a major long bone of a human, said body having a perimeter with a leading end, a trailing end opposite said leading end and a length therebetween, and opposite exterior sides, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a portion of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the implantation space, said trailing end having an arcuate portion on each side of a vertical longitudinal plane along the mid-longitudinal axis and bisecting said implant between said opposite exterior sides, each of said arcuate portions forming a part of an oval;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are ~~generally~~ parallel to each other; and

an opening formed by the medullary canal passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides, said opening having a perimeter with substantially the same configuration as a perimeter of the natural medullary canal present when the major long bone is cut transverse to the medullary canal to form the bone ring, ~~and a first dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said leading end of said body and a plane perpendicular to and bisecting the length of said body into two parts of equal maximum length along the mid-longitudinal axis, said opening having a second dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said trailing end of said body and the plane, said first dimension being greater than said second dimension, the plane passing through at least a portion of said opening~~said opening having a maximum length in a direction parallel to the mid-longitudinal axis and a maximum width transverse to the mid-longitudinal axis, the maximum width being greater than the maximum length.

224. (previously presented) The implant of claim 223, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 225 (cancelled).

226. (previously presented) The implant of claim 223, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

Claim 227 (cancelled).

228. (previously presented) The implant of claim 223, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for

engaging at least one of the adjacent vertebral bodies to maintain said implant within the implantation space.

229. (previously presented) The implant of claim 228, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

230. (previously presented) The implant of claim 228, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

231. (previously presented) The implant of claim 223, wherein said body has a closed perimeter.

232. (previously presented) The implant of claim 223, wherein said body has an open perimeter for providing access to said opening.

233. (previously presented) The implant of claim 223, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

234. (previously presented) The implant of claim 223, wherein at least a portion of said leading end is tapered for facilitating insertion of said implant between the two adjacent vertebral bodies.

235. (previously presented) The implant of claim 223, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies adjacent the implantation space into which said implant is to be inserted.

236. (previously presented) The implant of claim 223, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

237. (previously presented) The implant of claim 223, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

238. (previously presented) The implant of claim 237, further comprising a lock for locking said at least one bone screw to said implant.

239. (previously presented) The implant of claim 223, further in combination with fusion promoting substances.

240. (previously presented) The implant of claim 239, wherein said fusion promoting includes at least one of bone, bone morphogenetic protein, and genetic material coding for the production of bone.

241. (previously presented) The implant of claim 223, further in combination with a chemical substance to inhibit scar formation.

242. (previously presented) The implant of claim 223, wherein said trailing end includes a plurality of bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

243. (withdrawn) An interbody spinal implant made of a bone composite material for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone composite material, said body having a perimeter with a leading end, a trailing end opposite said leading end, and opposite exterior sides, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a generally straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a portion of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the implantation space, said trailing end having an arcuate portion on each side of a vertical longitudinal plane along the mid-longitudinal axis and bisecting said implant between said opposite exterior sides, each of said arcuate portions forming a part of an oval;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are generally parallel to each other; and

an opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides.

244. (withdrawn) The implant of claim 243, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 245 (cancelled).

246. (withdrawn) The implant of claim 243, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

Claim 247 (cancelled).

248. (withdrawn) The implant of claim 243, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at least one of the adjacent vertebral bodies to maintain said implant within the implantation space.

249. (withdrawn) The implant of claim 248, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

250. (withdrawn) The implant of claim 248, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

251. (withdrawn) The implant of claim 243, wherein said implant has a closed perimeter.

252. (withdrawn) The implant of claim 243, wherein said implant has an open perimeter for providing access to said opening.

253. (withdrawn) The implant of claim 243, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

254. (withdrawn) The implant of claim 243, wherein at least a portion of said leading end is tapered for facilitating insertion of said implant between the two adjacent vertebral bodies.

255. (withdrawn) The implant of claim 243, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies adjacent the implantation space into which said implant is to be inserted.

256. (withdrawn) The implant of claim 243, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

257. (withdrawn) The implant of claim 243, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

258. (withdrawn) The implant of claim 257, further comprising a lock for locking said at least one bone screw to said implant.

259. (withdrawn) The implant of claim 243, further in combination with fusion promoting substances.

260. (withdrawn) The implant of claim 259, wherein said fusion promoting includes at least one of bone, bone morphogenetic protein, and genetic material coding for the production of bone.

261. (withdrawn) The implant of claim 243, further in combination with a chemical substance to inhibit scar formation.

262. (withdrawn) The implant of claim 243, wherein said trailing end includes at least two bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

263. (currently amended) An interbody spinal implant made of cortical bone for insertion at least in part into an implantation space formed across the height of a disc space between adjacent vertebral bodies of a human spine and into at least a portion of the endplates of the vertebral bodies, the implantation space having a front wall, said implant comprising:

a body manufactured from a bone ring having a medullary canal obtained from a major long bone of a human, said body having a perimeter with a leading end, a trailing end opposite said leading end and a length therebetween, and opposite exterior sides therebetween, said body having a mid-longitudinal axis passing through said leading and trailing ends, said leading end having a straight portion in a direction from one of said opposite exterior sides to another of said opposite exterior sides along a part of the perimeter of said body adapted to abut the front wall of the implantation space when said implant is installed into the implantation space, said trailing end having an arcuate portion on each side of a vertical longitudinal plane along the mid-longitudinal axis and bisecting said implant between said opposite exterior sides, each of said arcuate portions forming a part of an oval;

opposite upper and lower surfaces adapted to be placed in contact with and to support the adjacent vertebral bodies, said upper and lower surfaces being non-arcuate;

said opposite exterior sides connecting said upper and lower surfaces and said leading and trailing ends, said opposite exterior sides of said implant having straight portions that are ~~generally~~ parallel to each other;

an opening ~~coincident with~~ formed by the medullary canal passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant, said opening being between said straight portions of said opposite exterior sides, said opening

having a perimeter with substantially the same configuration as a perimeter of the natural medullary canal present when the major long bone is cut transverse to the medullary canal to form the bone ring, ~~and a first dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said leading end of said body and a plane perpendicular to and bisecting the length of said body into two parts of equal maximum length along the mid-longitudinal axis, said opening having a second dimension as measured on the mid-longitudinal axis of said body between the perimeter of said opening toward said trailing end of said body and the plane, said first dimension being greater than said second dimension, the plane passing through at least a portion of said opening~~said opening having a maximum length in a direction parallel to the mid-longitudinal axis and a maximum width transverse to the mid-longitudinal axis, the maximum width being greater than the maximum length; and

said implant being formed by the process of cutting a section of a long bone in a direction transverse to the longitudinal axis of the long bone to form at least a portion of a bone ring and machining said leading end to form said straight portion.

264. (previously presented) The implant of claim 263, wherein said straight portion of said leading end is generally oriented at 90 degrees to the mid-longitudinal axis of the implant.

Claim 265 (cancelled).

266. (previously presented) The implant of claim 263, wherein said straight portion of said at least one side is generally oriented 90 degrees to said straight portion of said leading end.

Claim 267 (cancelled).

268. (previously presented) The implant of claim 263, further comprising at least one protrusion extending from at least one of said upper and lower surfaces for engaging at least one of the adjacent vertebral bodies to maintain said implant within the disc space.

269. (previously presented) The implant of claim 268, wherein said protrusion comprises at least one of a ridge, ratcheting, spline, and knurling.

270. (previously presented) The implant of claim 268, wherein said at least one protrusion is configured to facilitate motion of said implant in a direction of insertion into the implantation space and resist motion in a direction opposite to the direction of insertion.

271. (previously presented) The implant of claim 263, wherein said body has a closed perimeter.

272. (previously presented) The implant of claim 263, wherein said body has an open perimeter for providing access to said opening.

273. (previously presented) The implant of claim 263, wherein at least a portion of said upper and lower surfaces are in an angular relationship to each other from trailing end to leading end for allowing angulation of the adjacent vertebral bodies relative to each other.

274. (previously presented) The implant of claim 263, wherein at least a portion of said leading end is tapered for facilitating insertion of the implant between the two adjacent vertebral bodies.

275. (previously presented) The implant of claim 263, wherein said implant has a width greater than one half the width of the adjacent vertebral bodies adjacent the implantation space into which said implant is to be inserted.

276. (previously presented) The implant of claim 263, further comprising at least a second opening passing through said upper and lower surfaces for permitting for the growth of bone from adjacent vertebral body to adjacent vertebral body through said implant.

277. (previously presented) The implant of claim 263, in combination with at least one bone screw adapted to engage at least one vertebral body when inserted through said implant.

278. (previously presented) The implant of claim 277, further comprising a lock for locking said at least one bone screw to said implant.

279. (previously presented) The implant of claim 263, further in combination with fusion promoting substances.

280. (previously presented) The implant of claim 279, wherein said fusion promoting includes at least one of bone, bone morphogenetic protein, and genetic material coding for the production of bone.

281. (previously presented) The implant of claim 263, further in combination with a chemical substance to inhibit scar formation.

282. (previously presented) The implant of claim 263, wherein said trailing end includes a plurality of bone screw openings, each of said bone screw openings being adapted to receive a bone screw.

283. (previously presented) The implant of claim 1, wherein said opening is generally oval in shape.

284. (cancelled).

285. (previously presented) The implant of claim 1, wherein said opening includes a curved portion across the mid-longitudinal axis of said body proximate said leading end of said body.

286. (previously presented) The implant of claim 85, wherein said opening is generally oval in shape.

287. (cancelled).

288. (previously presented) The implant of claim 85, wherein said opening includes a curved portion across the mid-longitudinal axis of said body proximate said leading end of said body.

289. (previously presented) The implant of claim 163, wherein said opening is generally oval in shape.

290. (cancelled).

291. (previously presented) The implant of claim 163, wherein said opening includes a curved portion across the mid-longitudinal axis of said body proximate said leading end of said body.

292. (previously presented) The implant of claim 203, wherein said opening is generally oval in shape.

293. (cancelled).

294. (previously presented) The implant of claim 203, wherein said opening includes a curved portion across the mid-longitudinal axis of said body proximate said leading end of said body.

295. (previously presented) The implant of claim 223, wherein said opening is generally oval in shape.

296. (cancelled).

297. (previously presented) The implant of claim 223, wherein said opening includes a curved portion across the mid-longitudinal axis of said body proximate said leading end of said body.

298. (previously presented) The implant of claim 263, wherein said opening is generally oval in shape.

299. (cancelled).

300. (previously presented) The implant of claim 263, wherein said opening includes a curved portion across the mid-longitudinal axis of said body proximate said leading end of said body.